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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
09/670,839	09/28/2000	Shigeru Hosoe	02860.0656	7690

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EXAMINER	
PSITOS, ARISTOTELIS M	

ART UNIT	PAPER NUMBER
2653	3

DATE MAILED: 03/05/2004

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary	Application No.	Applicant(s)	
	09/670,839	HOSOE ET AL.	
	Examiner	Art Unit	
	Aristotelis M Psitos	2653	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

1)☒ Responsive to communication(s) filed on *28 September 2000*.

2a)☐ This action is **FINAL**. 2b)☒ This action is non-final.

3)☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

4)☒ Claim(s) *1-29* is/are pending in the application.

4a) Of the above claim(s) _____ is/are withdrawn from consideration.

5)☐ Claim(s) _____ is/are allowed.

6)☒ Claim(s) *1-29* is/are rejected.

7)☐ Claim(s) _____ is/are objected to.

8)☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

9)☐ The specification is objected to by the Examiner.

10)☒ The drawing(s) filed on *28 September 2000* is/are: a)☒ accepted or b)☐ objected to by the Examiner.

Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).

Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).

11)☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

12)☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

a)☒ All b)☐ Some * c)☐ None of:

1.☒ Certified copies of the priority documents have been received.

2.☐ Certified copies of the priority documents have been received in Application No. _____.

3.☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

1) ☒ Notice of References Cited (PTO-892)
2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
3) ☐ Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08) Paper No(s)/Mail Date _____.
4) ☐ Interview Summary (PTO-413) Paper No(s)/Mail Date. _____.
5) ☐ Notice of Informal Patent Application (PTO-152)
6) ☐ Other: _____.

DETAILED ACTION

Priority

Receipt is acknowledged of papers submitted under 35 U.S.C. 119(a)-(d), which papers have been placed of record in the file.

Specification

The title of the invention is not descriptive. A new title is required that is clearly indicative of the invention to which the claims are directed.

Claim Rejections - 35 USC § 102

The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

> A person shall be entitled to a patent unless –
>
> (a) the invention was known or used by others in this country, or patented or described in a printed publication in this or a foreign country, before the invention thereof by the applicant for a patent.
>
> (e) the invention was described in (1) an application for patent, published under section 122(b), by another filed in the United States before the invention by the applicant for patent or (2) a patent granted on an application for patent by another filed in the United States before the invention by the applicant for patent, except that an international application filed under the treaty defined in section 351(a) shall have the effects for purposes of this subsection of an application filed in the United States only if the international application designated the United States and was published under Article 21(2) of such treaty in the English language.

Claim Rejections - 35 USC § 103

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

> (a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negatived by the manner in which the invention was made.

The factual inquiries set forth in *Graham* **v.** *John Deere Co.*, 383 U.S. 1, 148 USPQ 459 (1966), that are applied for establishing a background for determining obviousness under 35 U.S.C. 103(a) are summarized as follows:

1. Determining the scope and contents of the prior art.
2. Ascertaining the differences between the prior art and the claims at issue.
3. Resolving the level of ordinary skill in the pertinent art.

4. Considering objective evidence present in the application indicating obviousness or nonobviousness.

This application currently names joint inventors. In considering patentability of the claims under 35 U.S.C. 103(a), the examiner presumes that the subject matter of the various claims was commonly owned at the time any inventions covered therein were made absent any evidence to the contrary. Applicant is advised of the obligation under 37 CFR 1.56 to point out the inventor and invention dates of each claim that was not commonly owned at the time a later invention was made in order for the examiner to consider the applicability of 35 U.S.C. 103(c) and potential 35 U.S.C. 102(e), (f) or (g) prior art under 35 U.S.C. 103(a).

Claim Rejections - 35 USC § 112

1. The following is a quotation of the second paragraph of 35 U.S.C. 112:

> The specification shall conclude with one or more claims particularly pointing out and distinctly claiming the subject matter, which the applicant regards as his invention.

2. Claims 9 and 21 are rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention.

In particular these claims attempt to define the structure by a process (not a polishing process).

Hence these claims fail to further limit their parent structure/apparatus claims properly.

As far as the claims recite positive limitations the following rejections are made.

3. Claims 1,2,6,10,11,25 are rejected under 35 U.S.C. 103(a) as being unpatentable over Official notice further considered with either Kashiwagi et al ('336), Hibino et al ('485) or Takanobu (JP '920).

Claims 1 and 25 are drawn to a combination of an optical pick up in an optical rec/repr. system. The elements contained therein are considered to be notoriously old and well-known and official notice is taken thereof, i.e.: (light source/laser), converging optical system, detector.

If applicants' can convince the examiner that such systems are not notoriously old and well known, then the examiner would rely upon Kajiyama et al (WO 98/19303) for disclosing such. The US equivalent document is cited as the translation for the WO 98/19303.

The above well-known systems/Kajiyama et al fail to particularly disclose the required surface roughness.

Jp 11-268920 teaches in this environment the ability of providing appropriate mechanism(s) to yield an optical element (lens) with an appropriate surface roughness range.

Kashiwagi et al , teaches in this environment, appropriate mechanism(s) to yield an optical element (glass lens) having high surface accuracy with an appropriate surface roughness range – see the description of tables 1 for instance.

Hibino et al teaches in this environment appropriate mechanism(s) to yield an optical element with an appropriate surface roughness range.

It would have been obvious to modify the base system of either the well known systems/Kajiyama et al with the above secondary references, motivation is to use existing mechanism(s) to provide for accurate optical elements used in this environment. The selection of manufacturing methods to yield highly accurate optical lens for use in this environment is considered a selection between equivalent manufacturing techniques predicated upon such criteria as cost, availability, reliability, repairability, life-cycle-costs.

With respect to claim 2, since the lens (either objective/collimator) normally have two surfaces, the ability of providing at least one surface (claim 2) with the desired surface roughness is considered inherently present.

With respect to claim 6, the secondary references are used in manufacturing/molding/shaping glass materials, and hence this claim is met.

Since the base reference (either the well known system, or Kajiyama et al) has the appropriate objective lens, collimator lens, the limitations of claims 10 and11 are met.

4. Claims 3-5 are rejected under 35 U.S.C. 103(a) as being unpatentable over the art as applied to claims 1,2 as stated in paragraph 3 above, and further in view of Inoue et al.

With respect to claims 3, the base system, or Kajiyama et al fail to particular state that the lens in the optical system are aspherical.

Inoue et al teach the ability of having/providing aspherical lens used as objective lens in this environment.

Furthermore, the lens is two sided – see fig. 13.and resin is one of the materials selected to make the lens.

It would have been obvious to modify the base system of the references relied upon above with the additional teaching from Inoue et al, motivation is as discussed in Inoue et al – see col. 1 lines 25-38.

5. Claims 7 and 8 are rejected under 35 U.S.C. 103(a) as being unpatentable over the art as applied to claim 1 as stated in paragraph 3 above, and further in view of Sato et al.

The ability to provide for an optical lens with appropriate reflectance for the wavelengths in question is taught by the Sato et al reference - see the discussion of figures 1 and 2 for instance.

It would have been obvious to modify the base system of the references as relied upon above in paragraph 3 with the above teaching from Sato et al for the reasons stated in col. 1 lines 39-55.

6. Claim 12 is rejected under 35 U.S.C. 103(a) as being unpatentable over the art as applied to claim 1 above, and further in view of Official notice.

The ability of having an encapsulated laser light source – detector with an optical lens on the cap thereof is considered well known in this environment and Official notice is taken thereof.

It would have been obvious to modify the base system as relied upon above in paragraph 3 and modify such so that the optical element is used with the sensor/detector unit, motivation is to reduce the overall footprint of the optical system and hence made it smaller.

7. Claims 13-18 and 22 are rejected under 35 U.S.C. 103(a) as being unpatentable over Inoue et al further considered with either JP 11-268920, Kashiwagi et al or Hibino et al.

Inoue et al disclose the ability of having/providing an aspherical lens used as objective lens in this environment.

Furthermore, the lens is two sided – see fig. 13.and resin is ~~one of~~ the materials selected to make the lens.

Inoue et al fails to mention the surface roughness range.

Jp 11-268920 teaches in this environment the ability of providing appropriate mechanism(s) to yield an optical element (lens) with an appropriate surface roughness range.

Kashiwagi et al , teaches in this environment, appropriate mechanism(s) to yield an optical element (glass lens) having high surface accuracy with an appropriate surface roughness range – see the description of tables 1 for instance.

Hibino et al teaches in this environment appropriate mechanism(s) to yield an optical element with an appropriate surface roughness range.

It would have been obvious to modify the base system of Inoue et al with the above teaching from any of the secondary references, motivation is to provide for optical glass production ability with high product quality, e.g., for high surface accuracy a desired feature in this environment to reduce beam distortions.

8. Claims 19 and 20 are rejected under 35 U.S.C. 103(a) as being unpatentable over the art as applied to claim 13 above, and further in view of Sato et al.

The ability to provide for an optical lens with appropriate reflectance for the wavelengths in question is taught by the Sato et al reference - see the discussion of figures 1 and 2 for instance.

It would have been obvious to modify the base system of the references as relied upon above in paragraph 7 with the above teaching from Sato et al for the reasons stated in col. 1 lines 39-55.

9. Claims 23 and 24 are rejected under 35 U.S.C. 103(a) as being unpatentable over the art as applied to claim13 above, and further in view of Official notice.

The ability of providing either a collimator lens, or as part of the sensor unit in this environment (optical elements in optical rec/repr. systems) is considered merely a selection of which lens is to be so provided. There is a plurality of optical elements in optical rec/repr. systems, and the ability of providing for objective lens, or collimator lens, or sensor units as such optical devices is considered merely a manufacturing ability predicated on such things as cost, reliability, availability. During the manufacturing stage of optical rec/repro. system with its plural optical elements, the desirability of reducing overall manufacturing tie ups and by providing the same process in manufacturing the appropriate optical elements (objective, collimator, sensor) delays in providing the components will be reduced, and hence reducing unnecessary delays in manufacturing the overall optical rec. repro. system.

10. Claim 26 is rejected under 35 U.S.C. 102(b/e) as being anticipated by either JP 11-268920, Hibino et al or Kashiwagi et al.

The JP document provides for a die with the appropriate range of surface roughness.

Hibino et al and/or Kashiwagi et al also provide for a die with an appropriate surface roughness range.

11. Claim 27 is rejected under 35 U.S.C. 103(a) as being unpatentable over the art as applied to claim 26 as stated in paragraph 10 above, and further in view of Inoue et al.

Inoue et al discloses the use of dies in manufacturing for aspherical lens in this environment.

It would have been obvious to modify the base system of any of the above primary references with the above teaching from Inoue et al, motivation is to provide for aspherical lens used in the optical field to increase the optical performance of an optical head as taught by Inoue et al – see col. 1, lines 15 plus.

8. Claim 28 is rejected under 35 U.S.C. 103(a) as being unpatentable over either JP 11-268920,Hibino et al or Kashiwagi et al each further considered with WO 00/17691 (Yamagata et al).

Jp 11-268920 teaches in this environment the ability of providing appropriate mechanism(s) to yield an optical element (lens) with an appropriate surface roughness range.

Kashiwagi et al , teaches in this environment, appropriate mechanism(s) to yield an optical element (glass lens) having high surface accuracy with an appropriate surface roughness range – see the description of tables 1 for instance.

Hibino et al teaches in this environment appropriate mechanism(s) to yield an optical element with an appropriate surface roughness range.

There is no specific mentioning as to how the molds, which are used, are manufactured using diamond tools.

Yamagata et al – the US equivalent is provided to applicants as a translation of the WO document- disclose the normal ability in manufacturing a die molding for one piece lens precision cutting using diamond tools is widely in use.

It would have been obvious to modify the base system of either Jp 11-268920, Hibino et al or Kashiwagi et al with the above precision cutting using diamond tools motivation is to use widely used manufacturing abilities and hence save resources such as time in not having to redesign the tools to manufacture the dies.

9. Claim 29 is rejected under 35 U.S.C. 103(a) as being unpatentable over the art as applied to claim 28 above, and further in view of themselves.

Claim 29 recites the roundness of the diamond tool to be a within a certain range. Although this range is not described in the above references, that there is a physical dimension to the roundness of the diamond tool is considered inherent. Since the surface roughness range is defined by the primary references to JP 11-268920, Hibino et al or Kashiwagi et al, it logically follows that there is a range for the roundness of the diamond tool in order to yield the surface roughness range. Hence the examiner concludes that the range of roundness defined in claim 29 would be obvious to one of ordinary skill in the art in order to create a die for an optical lens having the recited surface roughness range.

Conclusion

10. The prior art made of record and not relied upon is considered pertinent to applicant's disclosure. Umetani et al – die for a micro lens; Kashiwagi et al ('307) –die for press-molding optical elements; Nishimura – manufacturing workpiece for aspherical surface elements; Kashiwagi et al ('221) press-molding optical lens – see the table for surface roughness values within the range claimed; Nomura et al-plastic lens with surface roughness values given in values defined by JIS-B0601-1982;Kashiwagi et al ('728), die for press-molding optical elements; JP 11-207751 – mold for micro lens.

The examiner has not been able to obtain a copy of the noted JIS-B0601-1982 standard. The examiner respectfully requests applicants' cooperation in providing such, or material equivalent thereto, to assist the examiner in interpreting the appropriate characteristics with respect to figure 7 in Nomura et al.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Aristotelis M Psitos whose telephone number is (703) 308-1598. The examiner can normally be reached on M-Thursday 8 - 4.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, William R. Korzuch can be reached on (703) 305-6137. The fax phone number for the organization where this application or proceeding is assigned is 703-872-9306.

Hard copies of the application files are now separated from this examining corps, hence the examiner can answer no questions that requires a review of the file without sufficient lead-time.

Any inquiries concerning missing papers/references, etc. must be directed to Group 2600 Customer Services at (703) 306-0377.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see http://pair-direct.uspto.gov. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

Aristotelis M Psitos
Primary Examiner
Art Unit 2653

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